CLAIMS

What is claimed is:

1. A process for removing deposits from water-carrying systems and devices for water supply, or from their individual parts, comprising the step of dissolving a deposit from a water-carrying system or a device for water supply or from individual parts of the device by means of an aqueous treatment solution comprised of a combination of a reducing agent and a complexing agent, wherein the complexing agent is selected from the group consisting of phosphonic acid group, phosphonate group, and a complexing agent of hydroxy acid type.

2. The process of claim 1, wherein the reducing agent is selected from the group consisting of salty reducing sulfur-oxygen compound, nitrogen-oxygen compound, and phosphorus-oxygen compound, and the deposits are dissolved at pH values in the range of about 4.5 to 9.5.

3. The process of claim 2, wherein the deposits are dissolved at pH values in the range from about 6.0 to 8.0.

4. The process of claim 2, wherein the reducing sulfur-oxygen compound is at least a compound selected from the group consisting of dithionite and disulfite.

5. The process of claim 1, wherein the reducing agent has a concentration in the treatment solution in the range of 0.5 to 25 weight-%.

6. The process of claim 1, wherein the complexing agent is selected from the group consisting of 1-hydroxy ethane-1,1-diphosphonic acid (HEDP), 2-phosphono butane-1,2,4-tricarboxylic acid (PBTC), aminotri(methylene phosphonic acid) (ATMP), hexamethylene diamino tetra (methylene phosphonic acid) (HDTMP), diethylene triaminepenta (methylene phosphonic acid) (DTPMP), and their respective salt.

7. The process of claim 6, wherein the complexing agent is an alkaline metal salt.

8. The process of claim 1, wherein the treatment solution contains at least a compound selected from the group consisting of buffer salt, wetting agent, stabilizer and reducing agent, wherein the compound is introduced in one of a state selected from the group consisting of dissolved state, emulsified state, and as suspended solids.

9. The process of claim 1, wherein the deposit is at least of a composition selected from the group consisting of oxide, oxide hydrate, and hydroxide of iron metal or manganese.

10. The process of claim 1, wherein the deposit is dissolved by at least one process step selected from the group consisting of spraying, and washing off the deposit with the treatment solution.

11. The process of claim 1, wherein the deposit is dissolved by at least one process step selected from the group consisting of filling and rinsing the system or the device with the treatment solution.

12. The process of claim 1, wherein the water-carrying system includes one element selected from the group consisting of heat exchanger and cooling system and feed lines thereof, and the device for water supply includes one element selected from the group consisting of well, drinking water reservoir, drinking water conduit, filter system, water preparation plant, and plant sections and individual parts thereof.

13. The process of claim 12, wherein the device is a well, said dissolving step including a) filling the well with the treatment solution, b) allowing the treatment solution to react with the deposit for a predetermined reaction time to dissolve the deposit in the treatment solution, c) emptying the well by pumping out its content together with the treatment solution with deposit dissolved therein after the reaction time, and d) aftertreating the well with a solution of an oxidant.

14. The process of claim 13, wherein steps a), b) and c) are repeated at least once, before carrying out step d).

15. The process of claim 13, wherein the oxidant is hydrogen peroxide.

16. Use of a complexing agent of a phosphonic acid type and phosphonate type as active ingredient in a treatment solution for removal of an oxidic iron deposit and/or manganese deposit from a water-carrying system and a device for water supply.

17. Use of dithionite and/or disulfite as reducing active ingredient in a treatment solution for removal of an oxidic iron deposit and/or manganese deposit from a water-carrying system and a device for water supply.